Wickiup Reservoir Fish Habitat Restoration
Bend/Fort Rock Ranger District
Deschutes National Forest
USDA Forest Service, Pacific Northwest Region

Objective/Purpose of Project: The harvest of trees from the reservoir bottom prior to filling depleted potential fish and invertebrate habitat. With the widely fluctuating water levels, stumps that were left after timber harvest are now continuously becoming dislodged, buoyant, and floating down to the dam, where they have been disposed of in the past. The naturally occurring large wood component within the reservoir is decreasing. Wickiup Reservoir is renowned for its trophy brown trout fishery, with fish in excess of 20 pounds caught in recent years. Brown trout and kokanee salmon congregrate in Browns Creek and the Deschutes River in large numbers in the fall, and rainbow trout congregate in the Deschutes channel during the spring spawning migration. The fish are very vulnerable to predation and poaching as they migrate up the channels to reach spawning grounds. The brown trout of Browns Creek represent the only disease-free source of eggs in the state of Oregon. There has been a history of poaching of brown trout in Browns Creek. The objective was to restore the large woody material component within an area of approximately 40 acres. The project compliments the structure added in 4 other similar projects implemented this decade in Wickiup Reservoir, and other habitat projects completed in the tributary streams Browns Creek and the Deschutes River (all partnerships with ODFW and the Deschutes River Mitigation and Enhancement Program). In all, over 150 multiple tree structures (over 600 trees) and 54 large stumps have been added to the reservoir since 1990.

Methods or Techniques Used: Thirty structures of 4-5 whole trees were weighted with boulders and sunk in and adjacent to the Browns Creek and Deschutes River channels of the reservoir within an area covering over 40 acres. The Deschutes National Forest arranged the delivery of the trees and boulders to the decking area adjacent to the reservoir. The trees used in the project were whole lodgepole pine (with root wads and crowns attached) of 10-19" dbh and 50-75" length. The source of the trees was a powerline hazard removal project located on Deschutes National Forest lands. ODFW provided the rental and operation of a tracked excavator to assemble the structures at the decking area. Deschutes National Forest and ODFW work crews, including the use of volunteers, cabled the structures together, drilled boulders and glued eyebolts, and operated the boat and raft structure to sink the structures in the desired locations. The locations of many of the structures were recorded with GPS.

Realized/Expected results: Replacement of the large woody material will function to: (1) provide protection for mature fish from predators and poaching as they migrate up Browns Creek and the Deschutes River to spawn, (2) provide protection for juvenile fish as they move down to the reservoir from upstream rearing grounds, and (3) provide hiding cover for fish and habitat for invertebrates when the reservoir is full and the structures are inundated. Snorkeling of structures placed during past projects has indicated use by adult fish moving upstream to spawn, and use by juvenile fish as hiding cover. An Aqua-view underwater camera was used during the fall of 2000 to monitor use of the newly placed structures, as well as the previously placed structures. Visibility was limited because of an algae bloom. A few adult brown trout were observed under or adjacent to the structures. An underwater video of the structures was made by connecting the Aqua-view camera to a camcorder. Several otters were observed in the vicinity of the structures, possibly seeking fish.

Contact Person and telephone number: Tom Walker (541)383-4787

Agreement Type(s): Challenge Cost Share

Primary Partner List: Oregon Department of Fish and Wildlife , Deschutes River Mitigation and Enhancement Program

Project Data:

Category	# Miles Stream Restore	# Acres Lake Restore	# Miles Inven.	# Acres Inven.	# Monitor Plans	# Admin Studies	P&M Program Mgmt. Plan $$	P&M Overhead $$	P&M Total Ouput $$	Total FS + Partner $$	Other Res. $$	Partner $$	Total FS $$	In-kind $$
Totals	0	40	0	0	0	0	1,500	3,750	9,750	30,000	0	10,000	15,000	5,000
Inland Coldwater	0	40	0	0	0	0	1,500	3,750	9,750	30,000	0	10,000	15,000	5,000

Photographs